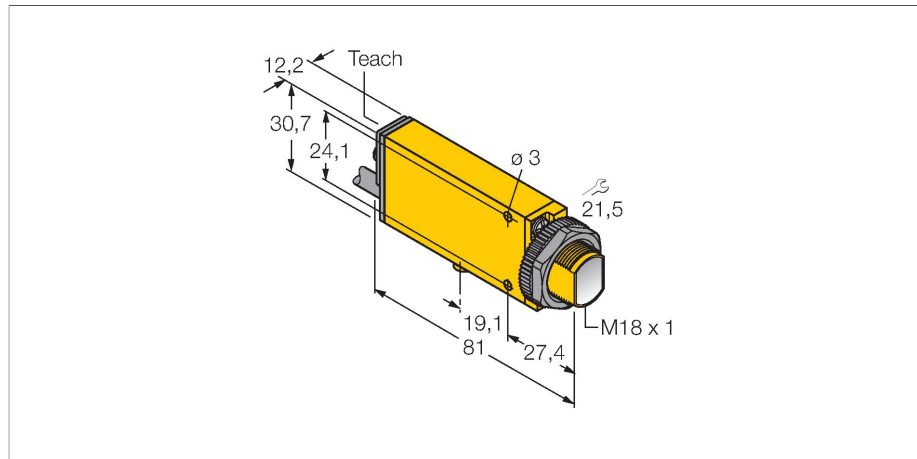


# SMU31R

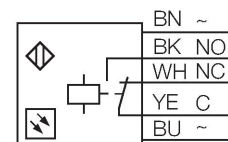
## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



### Features

- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 24...240 VDC or 24...240 VAC
- Relay output

### Wiring diagram



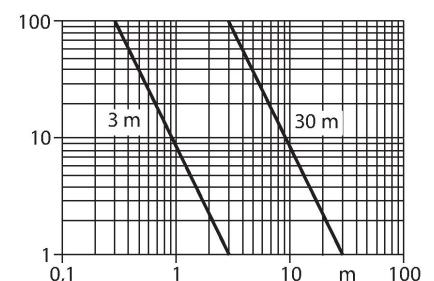
### Technical data

|                              |                                         |
|------------------------------|-----------------------------------------|
| Type                         | SMU31R                                  |
| ID                           | 3052576                                 |
| <b>Optical data</b>          |                                         |
| Function                     | Opposed mode sensor                     |
| Operating mode               | Receiver                                |
| Range                        | 3000 mm                                 |
| <b>Electrical data</b>       |                                         |
| Operating voltage            | 24...240 VDC                            |
| Operating voltage            | 24...240 VAC                            |
| DC rated operational current | ≤ 3000 mA                               |
| AC rated operational current | ≤ 3000 mA                               |
| Output function              | NO/NC, Relay output                     |
| Switching frequency          | ≤ 25 Hz                                 |
| Readiness delay              | ≤ 0 ms                                  |
| Response time typical        | < 20 ms                                 |
| Max. DC switching capacity   | 1 W                                     |
| Setting option               | Potentiometer                           |
| <b>Mechanical data</b>       |                                         |
| Design                       | Rectangular with thread, Mini Beam      |
| Dimensions                   | Ø 18 x 81 x 12.3 x 30.7 mm              |
| Housing material             | Plastic, Thermoplastic material, Yellow |
| Lens                         | plastic, Acrylic                        |
| Electrical connection        | Cable, 2 m, PVC                         |
| Number of cores              | 5                                       |
| Core cross-section           | 0.5 mm <sup>2</sup>                     |
| Ambient temperature          | -20...+55 °C                            |

### Functional principle

Opposed mode sensors consist of an emitter and receiver. They are installed opposite each other so that the light from the emitter is aimed directly at the receiver. When an object interrupts or weakens the light beam, the sensor switches. Opposed mode sensors are the most reliable photoelectric sensors for detection of opaque targets. An excellent contrast between light and dark conditions and an extremely high excess gain are typical of this sensing mode, thus allowing operation over larger distances and under difficult conditions.

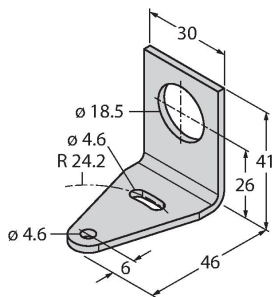
Excess gain curve  
Excess gain in relation to the distance



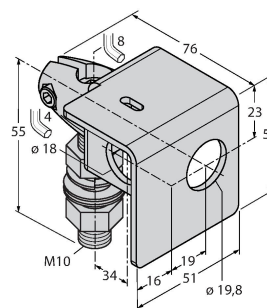
## Technical data

|                        |                                           |
|------------------------|-------------------------------------------|
| Protection class       | IP67                                      |
| Special features       | Encapsulated                              |
| Switching state        | LED, Red                                  |
| Excess gain indication | LED, red, flashing                        |
| <b>Tests/approvals</b> |                                           |
| MTTF                   | 777 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE, cURus, CSA                            |

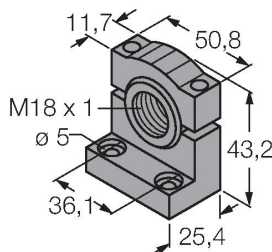
## Accessories

**SMB18A**
**3033200**


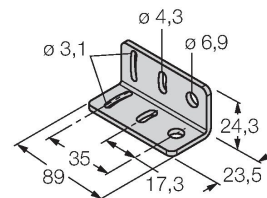
Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread

**SMB18AFAM10**
**3012558**


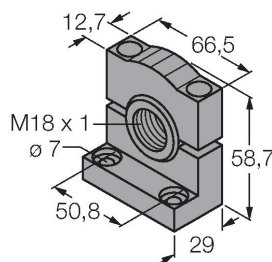
Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm

**SMB18SF**
**3052519**


Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable

**SMB312B**
**3025519**


Mounting bracket, stainless steel, for MINI-BEAM NAMUR

**SMB3018SC**
**3053952**


Mounting bracket, PTB black, for sensors with 18 mm thread